

EXPLANATION OF PLATE VIII.

- Fig. 1. *Aspidiotus carpodeti*, abdomen of female.
 Fig. 2. " " haltere of male.
 Fig. 3. *Mytilaspis epiphytidis*, abdomen of female.
 Fig. 4. *Chionaspis dysoxyli*, puparium of female.
 Fig. 5. " " puparium of male.
 Fig. 6. " " abdomen of female.
 Fig. 7.)
 Fig. 8.) *Fiorinia asteliae*, various forms of 2nd pellicle.
 Fig. 9.)
 Fig. 10. *Ctenochiton hymeniantheræ*, antenna of female.
 Fig. 11. " " antenna of male.
 Fig. 12. " *elæocarp*i, female on twig.
 Fig. 13. " " female, 2nd stage, on leaf.
 Fig. 14. " " antenna of female.
 Fig. 15. *Inglisia ornata*, tests, male and female, on twig.
 Fig. 16. " " segment of test.
 Fig. 17. " " antenna of female.
 Fig. 18. " " foot of female.
 Fig. 19. " " marginal spines, adult female.
 Fig. 20. " " spines and tubes, young insect.
 Fig. 21. " " foot of male.
 Fig. 22. " " extremity of antenna of male.
 Fig. 23. " " spike, penis, and setæ of male.
 Fig. 24. *Lecanium oleæ*, females on twig.
 Fig. 25. " *hemisphæricum*, females on twig.
 Fig. 26. " *mori*, females on frond of fern.

ART. V.—On the Spiders of New Zealand. By A. T. URQUHART.

[Read before the Auckland Institute, 27th October, 1884.]

Plates IX.—XI.

Owing to our not possessing in the library of this Institute Koch's great work "Die Arachniden Australiens" and Walckenaer's "His. Nat. des Insectes Aptères," I was obliged to refer home for detailed descriptions of, as far as I have been able to ascertain, rather more than one-half of the described species of New Zealand spiders. As the greater portion of the New Zealand species described by Koch were omitted in the transcript—recently received,—I have struck out from this preliminary paper all doubtful species that may have been described before, and trust that the few retained will prove new to science. The family *Thomisidæ*, represented by two genera *Philodromus* and *Sparassus*, and the genera *Arachnura* and *Sphasus* I believe have not been previously recorded as occurring in New Zealand.

Fam. EPEIRIDÆ.

Genus *Epeira*, Walck.

Epeira brounii, sp. n. Pl. x., fig. 5.

Length of an adult female 18 mm., and of an adult male 11 mm.

The *cephalothorax* of the female is moderately convex, compressed before, rounded on the sides, medial indentation and normal grooves moderate; it has a reddish-brown hue, and is clothed with silky whitish hairs. The height of the *clypeus* equals the facial space.

The four intermediate *eyes* are placed on a prominence and nearly form a square; the tubercles of the lateral eyes arch over the anterior pair.

Relative length of *legs* 1, 4, 2, 3, first and fourth nearly equal (30 mm.); they have a red chestnut tint, and are sparingly furnished with fine light hairs; the armature consists of spines and sustentacula.

The *palpi* are moderately slender and resemble the legs in colour.

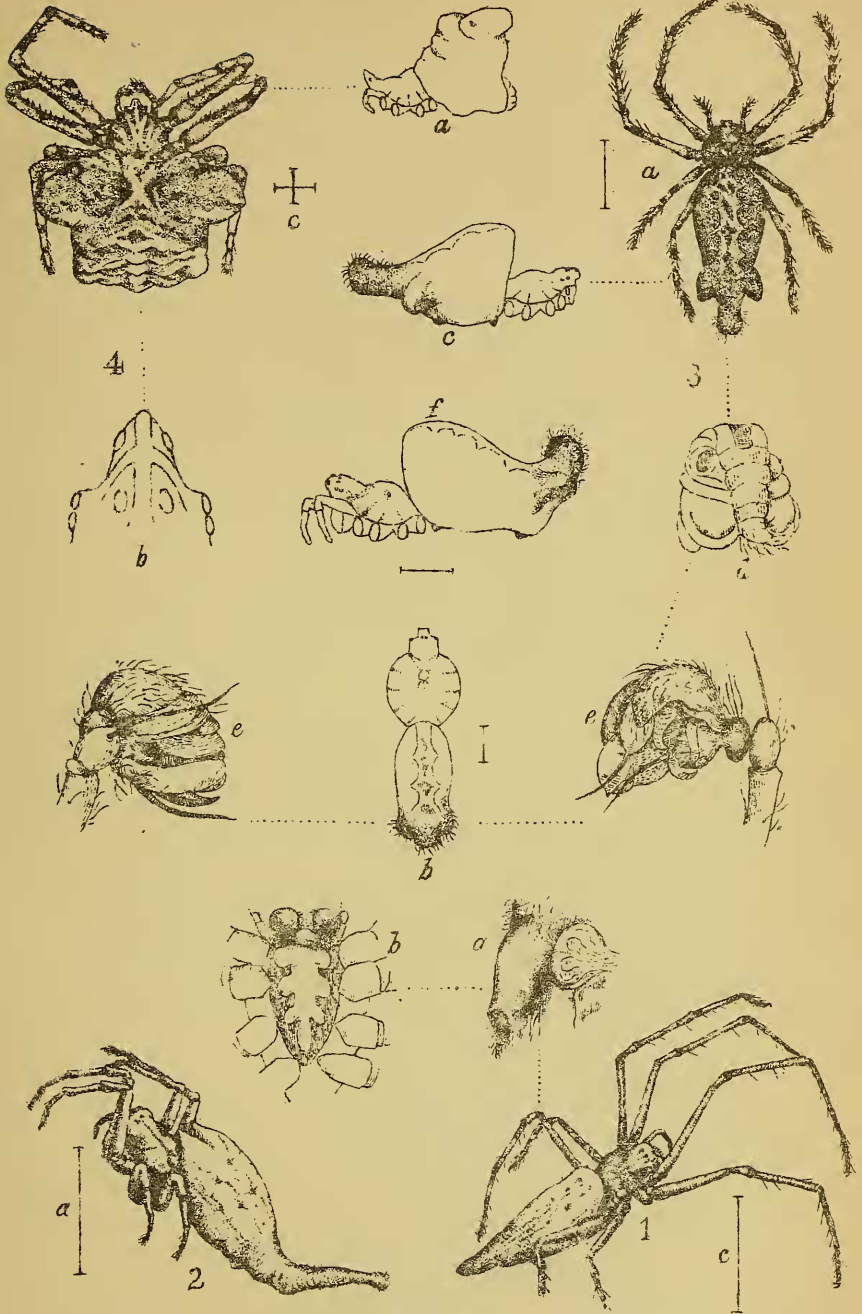
The *falces* are strong, vertical, and have a dark amber hue.

The *maxilla* are as broad as long, slightly pointed, and inclined towards the *lip*, which is somewhat oval: these parts have a greenish-brown tint.

The *sternum* is heart-shaped, has eminences opposite the legs; is brown in colour, and clothed with light hairs.

The *abdomen* is a broad oval, depressed above, projects over the base of the *cephalothorax*; the ground colour is brown, and the specific markings have a pale ochraceous hue; the fore-pair of impressed spots form a transverse line with the anterior tubercles; these brown spots are intersected by the broad medial band, forming a cross-like pattern, margined with the paler tints; the fore-margins have a somewhat crescent-shape, and the hind converge into a double loop above the posterior tubercle; between this conical protuberance and the two anterior tubercles there are four hook-shaped marks; on the lateral margins there are a series of oblique lines converging towards the spinners. On the ventral surface there is a shield-like mark with light margins, and a double row of four pits in the centre. The *vulva* consists of a long, curved, dark amber-coloured, wrinkled, taper, membranous process, directed backwards; beneath it are black protuberances.

The male is about two-thirds the length of the female. The *cephalothorax* is oval, nearly as broad as long; medial fovea deep; the anterior prominence of the *caput* is more pointed, and the tubercles of the lateral eyes more prominent than in the female; it has a brownish-amber hue. The legs are long, moderately stout, and resemble the *cephalothorax* in colour; there is a curved process on the *coxæ* of the first pair; the *tibiæ* of the second pair are tumid, and have four irregular rows of spines on the inferior surface; the general armature consists of numerous long spines.



NEW ZEALAND SPIDERS.

A.T.U. del.

The *palpi* are short and stout, yellowish-brown; the cubital and radial joints are short, the former has at its extremity, in front, a long bristle directed forwards, and the latter joins in closely with the digital joint, which is well developed, and somewhat globose; the convex sides are hairy, and directed towards each other; the palpal organs are complex, and compact, the most remarkable being a strong curved process at the base. The *abdomen* is ovate; it has the same tints, and the specific pattern much the same form, as the female.

I have much pleasure in connecting this fine species with the name of Captain Broun, M.E.S., to whom I am indebted for an interesting collection of spiders. Several examples were captured by him at Tairua and Whangarei Harbour. I have taken it near Auckland.

Epeira indistincta, var. n.

This handsome variety only differs from *E. brounii* in colour, and as a rule in the specific pattern being less distinct; the *cephalothorax* and *legs* have a rather dark amber colour, and the *abdomen* has a pale yellowish-brown hue faintly tinged with green; the specific marks are buff, picked out with red.

Numerous specimens. Tairua, Whangarei Harbour, *T. Broun*; Karaka, Auckland, *A.T.U.*

Epeira (?) *attenuata*, sp. n. Pl. ix., fig. 1.

Length of an adult female, 15–17 mm.

The *cephalothorax* is oval, depressed above; the lateral constrictions at the caput, which is rather convex and roundly truncate, are moderate; there is a deep transverse fovea, and the furrows at the junction of the caput are well marked; it has a yellow amber hue, suffused with brown; sparingly clothed with pale grey silky hairs. The profile line ascends with a slight curve from the thoracic junction, running in an undulating line to the ocular area, which is only moderately prominent; projecting slightly over the *clypeus*, whose height is more than the diameter of one of the fore-central eyes.

The area of the four intermediate *eyes* is nearly twice as long as broad in front, this interval being rather more than the diameter of one of these eyes; the space between the hind-centrals is slightly in excess of the latter interval; the laterals are nearly contiguous, and placed on tubercles; the fore-pair are the smallest of the eight. The eyes, which are seated on small black tubercular spots, when viewed from above form two transverse rows; the anterior row includes the laterals, and is slightly procurved.

The *legs* are long and slender, relative length 1, 2, 4, 3, the second pair nearly equals the first in length; they are like the *cephalothorax* in colour, and are moderately furnished with dark hairs and long fine spines.

The *palpi* resemble the legs in colour, and are clothed with hairs and bristles.

The *falces* are strong, conical, vertical, divergent at their extremities; armed with a short double row of teeth.

The *maxillæ* are a broad oval, slightly inclined towards the *lip*, which is pointed, broader than long; these parts have a duller yellow hue than the *falces*.

The *sternum* is cordate, brown, and stamped with a yellow seven-lobed embossed mark.

The *abdomen* is ovate-lanceolate, of a slightly mottled creamy brown colour, margined—as far as the base of the tail-like extremity—with two broad bands of soft light silky hairs; beneath these bands there are a series of longitudinal undulating wrinkles; a narrow irregular brown medial line runs between the eight impressed spots. From the posterior pair of spots a series of four creamy brown longitudinal streaks extend along the superior surface of the tail; this part, measured from the posterior pair of spinners, is 5 mm. in length; it is shaded with brown and yellow-brown tints, furnished with fine erect hairs, and encircled with closely-set wrinkles; devoid of terminal tubercles. The ventral surface has a dark brownish hue; two creamy-coloured bands extend from the branchial opercula as far as the posterior spinnerets. The *vulva* consists of a long, thick, pendulous yellow-brown process, directed backwards, with an orifice at its extremity.

This species—which I have placed provisionally amongst the *Epeira*—appears to be intermediate between that genus and *Arachnura*; resembling the former in having spines on the 3-4 pairs of legs, and showing its affinities to the latter genus by its cross-ringed tail; which is stouter and less flexible than that of the type form.

It affects shrubs, and the lower parts of furze hedges.

Tairua, T. Brown; Karaka, Auckland, A.T.U.

Genus *Arachnura*, Vinson.

Arachnura longicauda, sp. n. Pl. ix., fig. 2.

Length of mature female—body extended, 11-16 mm.; length of cephalothorax, 2½ mm.; breadth, 2 mm.; breadth of abdomen, 3 mm.; length of tail from posterior pair of spinners, 5-7 mm. Length of adult male, 1¾-2 mm.

Female.—The *cephalothorax* is oval, moderately convex, constricted anteriorly, a glossy dark straw colour, finely rugulose, furnished with a few white hairs; the margins are edged and speckled with dark olive-green, and two narrow—sometimes blending into one—stripes of a similar shade extend along the medial line; a large pale straw-coloured, semi-oval, convex lobe, with a faint longitudinal sulcus, extends from the base to the centre of the thorax.

This lobe forms a somewhat rounded prominence in the profile line, which otherwise ascends gradually in nearly an even line to the ocular area; the fore-part of this area, containing the four intermediate eyes, is prominent; the height of the *clypeus* is rather more than twice the diameter of a fore-central eye.

The *eyes* are placed on small black tubercular prominences; the fore-centrals, which are about one eye's breadth apart, are the largest, the rest about equal; the space between the hind-centrals is less than one eye's diameter, and they are further from the fore-centrals than these eyes are from each other; the laterals are about half an eye's breadth apart, and seated obliquely on tubercles.

The *legs* are short, relative length, 1, 2, 4, 3; the first, second, and fourth about equal (6 mm.); they resemble the cephalothorax in colour, and are speckled with dark spots; the femoral, genual, and tibial joints of the 2, 3, 4 pairs have two greenish stripes on the upper surface; the armature consists of erect hairs, and a few long fine spine-like bristles on the 1-2 pairs—one or two weak ones on the 3-4.

The *palpi* resemble the legs in colour and armature.

The *maxillæ* are broad, somewhat obliquely truncate; brownish-yellow.

The *labium* is semicircular, pointed, brownish, light apex.

The *falces* are strong, conical, vertical, armed with a double row of teeth; same hue as the legs.

The *sternum* is heart-shaped, brown; in the centre there is a seven-lobed embossed mark of a yellowish colour, and speckled with brown spots; resembles fig. *b*, pl. ix.

The *abdomen* is triangular-lanceolate in form, projects over the cephalothorax; at the fore-extremity there are two conical protuberances, directed forwards, formed by a deep cleft in the abdomen; posteriorly it tapers off to a long transversely wrinkled tail-like process. This portion of the abdomen is tinted with yellowish and dark brown hues, more thickly clothed with short erect hairs; on the ventral surface there is a light-coloured band with four transverse bars, extending from the spinners to the apex; on this somewhat conical extremity are seated five small reddish tubercles.

The colouring of this species is very variable; but in most examples the fore-part of the abdomen has a creamy hue more or less mottled with violet; from the base of each conical projection a violet, yellow, or red line runs through each pair of impressed spots; between them there is a narrow medial streak, with short oblique bars. The lateral margins from the fore-part of the tubercles to the base of the tail, have a broad band of close-set longitudinal undulated wrinkles; this part and the ventral surface have a greenish-brown hue. The *vulva* consists of a broad lip-like process.

The male is much smaller than the female, being hardly 2 mm. in length. The *cephalothorax* does not differ much from that of the latter, but the *abdomen* is remarkable as it bears a somewhat close resemblance to the undeveloped form of a very young female; it is short, broad, and almost squarely truncated at either end; the depression at the base is slightly concave, and the prominences on either side are rounded and abortive. At the posterior end there are six wide, deep, transverse wrinkles extending over about one-third of the abdomen, which terminates with prominent, obtuse tubercles; the lateral marginal wrinkles are also well developed. In colour the abdomen is a yellowish-brown, mottled with a darker tint. The *legs* have a bright yellow colour, tinged with reddish-brown; they are furnished with hairs, and a very few fine hair-like bristles. The *palpi* are short, resemble the legs in colour, and have a few fine hairs. The femoral joint does not greatly exceed the cubital in length; at the base and outer side of the latter there is a rather prominent semi-bulb; the radial joint is darker, shorter, and projects on the outer side a short curved apophysis; immediately above it the base of the hairy convexity is produced into a similar but more curved bright reddish-brown apophysis; the digital joint is oval, convex, and hairy externally, the convex sides directed towards each other; concave within, comprising the palpal organs, which are not very complex; on the outer side, projecting from beneath the upper folds, there is a broad, flatish, twin apophysis directed downwards, the extremities are truncated, dark, and serrated; projecting forwards from beneath this apophysis is a finely-pointed dark process; partially in front of this one is a stronger dark serrated process, directed downwards.

Although this interesting species, from the relative length of the legs and the lesser interval between the lateral eyes, appears to be more closely allied to Koch's *Epeira higginsii* and *E. feredayi* than to Vinson's *A. scorpionoides*, I have thought it preferable to follow Vinson. In reference to its long flexible tail he says it is "susceptible d'abaissement et d'élévation, et se recourbe également vers le dos ou vers le ventre;" this power obtains in the N.Z. species. It generally affects shady places, usually spinning its small vertical web beneath the boughs of trees. I have observed the females constructing cocoons from October to August; they are composed of light-brown silk of a loose felty texture. The female, when fabricating the somewhat cylindroid cocoons, spins a strong horizontal line across the upper surface of the web, to which she suspends a thin pedicle 10 mm. or more in length; this rope-like structure is then enlarged into the first cocoon, about 8 mm. in length and $3\frac{1}{2}$ mm. in diameter; between this cocoon and the next there is a short node; this process is repeated until there are sometimes as many as nine cocoons, the entire length being about

12 mètres. Comprised within each cocoon are about 20–32 pale stone-coloured unagglutinated eggs. In the first cocoon of a nidus examined on the 14th June the young were little more than 1 mm. in length, and had attained to some extent their normal tints; the abdomen was a broadish oval, convex, with only a slight longitudinal indentation on the fore-part, the tail being represented by a small convex lobe; in the second cocoon the tints were not so dark, and the young in the third had only a slight tinge on the abdomen; fig. 10, pl. x., represents a young translucent spider from the fourth cocoon; the fifth and sixth only contained eggs. The female invariably rests in the centre of the web.

Karaka, Auckland, *A.T.U.*

Arachnura nigritia, var. n.

Length of an adult female, 10 mm.

The *cephalothorax* of this handsome variety is hyaloid, pale stone-colour, tinged with olive-green, normal markings dark chocolate. The *palpi* and *legs* have a reddish-chocolate hue, suffused and streaked with dark brown; at the articulation of the joints and apices of the tarsi there are bright yellow annuli. The *falces* have a dark olive tint, and the *maxillæ* and *labium* a chocolate hue, margined with yellow. The fore-part of the *abdomen* from the spinners, is finely mottled with pale and blackish olive-green; the tubercular prominences and medial band are shaded with bright orange and orange-red; the wrinkled lateral margins are a bright velvety brown; the ventral surface has a black velvety appearance; and the tail a blackish olive-brown hue; the close set wrinkles well defined.

Apparently rare. Karaka, Auckland, *A.T.U.*

Arachnura obtusa, sp. n.

Length of a mature female, 6 mm.

This species may be distinguished from *A. longicauda* not only by its smaller size, but by the almost entire absence of the longitudinal cleft in the abdomen, and the more vertical position of the tubercles, which are obtuse, and of an orange-red colour with buff tips. The *cephalothorax* is of an olive-tinged yellow colour, suffused with chocolate-brown, medial band same hue. *Legs* and *palpi* yellowish-brown, suffused with chocolate and marked with a few olivaceous streaks. The *falces* have the yellowish hue of the legs, and the *maxillæ* and *lip* are chocolate, with olive-yellow margins. The *abdomen* is of an olivaceous-brown colour mottled with a lighter tint; the medial band is brown margined with orange-red; the tail is distinctly wrinkled and has the same dark hue, its five small tubercles resemble the anterior ones in colour.

Karaka, *A.T.U.*

Arachnura trilobata, sp. n. Pl. ix., fig. 3.

Length of an adult female $9\frac{1}{2}$ mm., and of an adult male 5 mm.

The *cephalothorax* is oval, convex, glossy black; constricted laterally forwards; medial fovea deep; the caput is strongly convex, and its normal grooves well defined; the profile line forms a double arch, the highest part being at the occiput; the fore-part of this area is prominent, projecting over the *clypeus*, whose height equals the depth of the ocular area.

The four intermediate *eyes* form a trapezoid, whose length is greater than the interval between the fore-central eyes; the hind-centrals are about one-quarter of an eye's breadth apart; the laterals are placed obliquely on strong tubercles, the space between them is about one-half their diameter. The eyes are moderately large and have a pearly lustre.

The *legs* are moderately long and strong, 1, 2, 4, 3, the second pair nearly equals the first in length (9 mm.); they have a yellowish hue and well-defined brown annuli; the armature consists of strong hairs.

The *palpi* are not very long, and are indistinctly annulated with brown and black tints.

The *falces* are prominent, conical, and nearly vertical, glossy dark brown.

The *maxilla* are convex, and somewhat obliquely truncated, they are glossy dark brown; the *labium* has the same hue, is semicircular, pointed.

The *sternum* is heart-shaped, dull brownish-black, stamped with the seven-lobed mark. The *abdomen* is a long oval, convex, and rises almost perpendicularly from the thoracic junction; posteriorly it terminates in three blunt transversely wrinkled protuberances, the central one is much the longest; it is of a very glossy dark green—in some examples nearly black hue, almost devoid of hairs, except on the tail-like extremity and lateral lobes which are a dull black, faintly streaked with yellowish-brown, furnished with short erect hairs; a broad irregular silver band with lake-coloured marks extends along the medial line to the base of the central protuberance, where it ends in a more or less defined silver crescent; the lateral margins are devoid of the longitudinal wrinkles, have a dull black hue, and are mottled and streaked with pale brownish-yellow; ventral surface dull black. The *vulva* consists of black oval protuberances, over which hangs a broad, curved, wrinkled, membranous process, directed backwards.

The male is much smaller than the female, being only 5 mm. in length. The *cephalothorax*, which equals the abdomen in length, is a broad oval, dull brownish-black, finely rugulose. The *legs* are somewhat like those of the female in colour; the armature consists of strong spines and a few fine dark hairs. The *palpi* are short, the three first joints have a yellowish-brown colour; at the apex of the cubital joint there is a strong bristle; the

radial joint is short, brownish-black, with a tuft of strong hairs on the upper side; the digital joint is large, dark brown, convex and hairy externally, concave within, reddish-brown; the palpal organs are prominent, complex, directed outwards; the most remarkable are two long bristle-like processes, and a claw-like process at the base of the outer side. The *abdomen* somewhat resembles that of the female both in colour and form, but it is comparatively broader at the posterior end, and the central protuberance is shorter, devoid of the yellowish streaks, and the wrinkles more defined.

Var. a., nov. Pl. ix., fig. f.

Length of mature female 7mm.

The posterior portion of the *abdomen* bears a resemblance to that of the male, the central lobe is short and stout, strongly wrinkled, coloured markings absent; the crescent-like termination of the medial band well-defined. This example is figured with the tail curled up. This species pairs in February–March, possibly earlier; the female fabricates, generally on the ends of manuka twigs, a conical pale copper-coloured cocoon of a soft silky texture, 9 mm. in height, and about the same in diameter, comprised within is a cocoon 8 mm. in diameter, containing about 49 spherical straw-coloured agglutinated eggs.

Tairua, *T. Brown*; Karaka, Auckland, *A.T.U.*

Fam. THLAOSOMIDES.

Genus *Thlaosoma*, Cambr.

Thlaosoma olivacea, sp. n. Pl. ix., fig. 4.

Adult female, length 5 mm., breadth of abdomen at the widest part $5\frac{1}{2}$ mm.

The *cephalothorax* is broad, rounded at the sides, constricted anteriorly, it is of a dull greenish-yellow colour, sparingly clothed with silky whitish hairs, the sides are marked with dark olive, a broad whitish medial band extends from the ocular area to the region of the thoracic junction, which is a little raised and divided into two subconical points by a longitudinal cleft. The fore part of the caput, which is of a red-chestnut colour, is upturned, ending in a subconical point, on its face are placed the four minute central eyes, which are divided by a broad yellow cross; the laterals are seated on small tubercles.

Relative length of *legs* 1, 2, 4, 3, those of the first and second pair are much the longest (9 mm.), and about equal in length; the femoral joints are rather stout and armed along the outer side with several rows of minute spinous tubercles, the outer rows being the strongest; the femoral joint of the third, and the tibiæ of the first and second pairs, are similarly armed, but to a less extent; the femoral and genual joints have a yellowish-brown

colour suffused with red-chestnut, the other joints are yellowish with brown annulations. The tarsi terminate with three claws all differing from the rest in strength and curvature.

The *palpi* are short, with annulations of three shades.

The *falces* are vertical, dull black, finely rugulose.

The *maxillæ* are somewhat quadrate, blackish-brown, reddish margins.

The *labium* is triangular, about twice as long as high, resembles the *maxillæ* in colour.

The *sternum* is blackish-brown, heart-shaped.

The *abdomen* is large, on the fore part, which projects over the base of the cephalothorax, there is an oblong brown mark, margined with a smooth space of a pinkish colour clothed with whitish hairs; on either side the surface of the anterior part of the abdomen is deeply wrinkled; four prominent humps form a transverse row across the centre, the exterior ones are somewhat conical, divergent, and directed slightly backwards; the upper and anterior face has an olive hue, the ridges tinted with brownish-pink; the posterior extremity is somewhat pointed with five transverse wrinkles; the hind parts are tinted with light shades. The ventral surface has deep transverse wrinkles, is of a yellowish-brown colour, sparingly furnished with light hairs. The *vulva* is black with a large reddish lip-like protuberance.

Karaka, Auckland, *A.T.U.*

Fam. THERIDIIDÆ.

Genus *Argyrodes*, Simon.

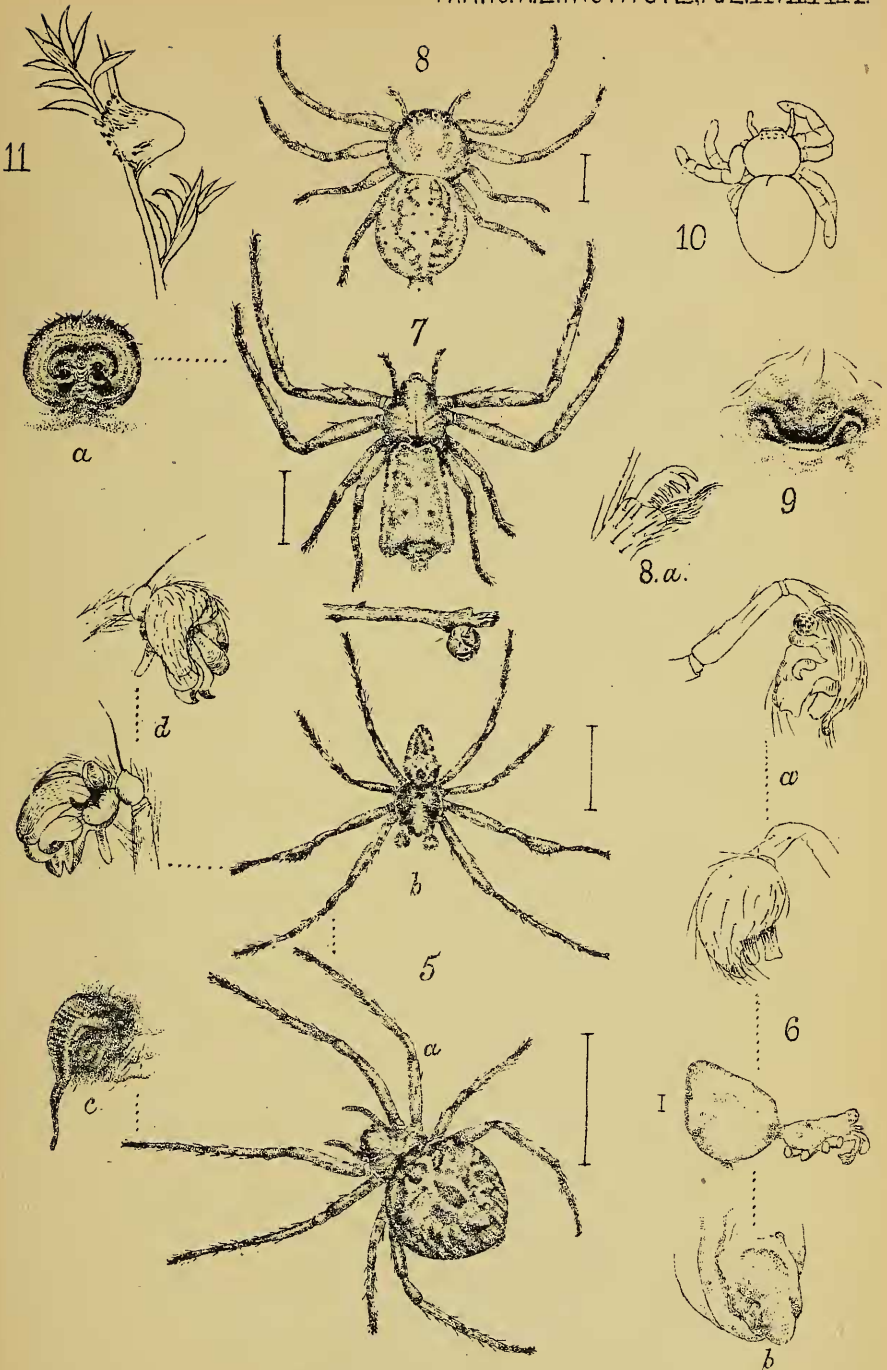
Argyrodes conus, sp. n. Pl. x., fig. 6.

Length of a mature female $2\frac{1}{2}$ mm., and of an adult male 2 mm.

The *cephalothorax* is oval, moderately convex, glossy black; nearly glabrous; the profile line ascends gradually from the thoracic junction in an undulating line, caused by the transverse indentation, to the ocular area; the forepart of this area is very prominent, forming a deep indentation in the profile of the *clypeus*, whose height otherwise is rather more than the length of the ocular area; lateral marginal constrictions at the caput moderate, normal grooves deep.

The *eyes* are about equal in size, and have a pearly lustre; the four central eyes form a square, and the hind-centrals are rather further apart from each other than each is from the posterior lateral eyes, which are seated obliquely on strong tubercles and nearly contiguous to the anterior laterals.

The *legs* are long and slender, the first pair is the longest (6 mm.), second and fourth about equal; they have yellowish-brown tints, and with the exception of the first pair, only faintly annulated with a darker hue;



NEW ZEALAND SPIDERS

A.T.U. del.

they are furnished only with fine erect hairs. The superior tarsal claws of the first pair differ from each other in size, the outer claw being the largest, and are provided with two teeth of unequal size pointing obliquely forwards; the inferior claw is as large as the greater of the superior claws, more powerful, and furnished with a long pointed tooth.

The *palpi* are slender, darker than the legs; the claw is long, fine, slightly curved, with two teeth of different size, pointing obliquely forwards.

The *falces* are long, vertical, tapering, divergent at the extremities, brownish.

The *maxillæ* are oblong, sides nearly straight, roundly-pointed at the extremities, parallel. *Labium* short and broad; has the dark brown shade of the *maxillæ*.

The *sternum* is somewhat cordate, convex, black.

The *abdomen* is large, conical; the dorsal portion is of a dull silver, with faint pinkish reflections; from the petiolum a black toothed band faintly margined with yellow ascends to the apex, and converges from the thoracic junction to the spinnerets; the sides and ventral surface are black. The spinners are surrounded by a sheath-like band, formed by a deep circular groove; the outer margin of this groove, viewed laterally, forms a protuberance on which there is a circular fovea; between this depression and the vulva, on the side of the abdomen there is a larger one of an oval form. The *vulva* consists of a somewhat square, moderately raised black protuberance, to which is attached a broad crimson process, directed backwards.

The male is rather shorter than the female and resembles her in colour and markings; the *cephalothorax* is comparatively narrower, and the ocular area more prominent; projecting from the clypeus is a long, strong dark brown process, its tumid conical point has hairs directed backwards. The humeral and radial joints of the *palpi* are long and resemble the legs in colour; the digital joint is unusually developed, convex and moderately hairy externally, black; concave within, brownish; the palpal organs are complex, the most remarkable are two strong processes directed downwards. The *abdomen* is similar in form to that of the female, but it is smaller, slopes backwards, exposing the petiolum. These interesting little spiders are quasi-parasitic on the webs of the larger *Epeirids*, they are also to be found under the eaves of low buildings on the webs of the *Theridiida*, etc., When resting on webs the abdomen is always below, the legs being drawn together and extended upwards. The females commence constructing their cocoons towards the end of December; most of the young are hatched in March. Occasionally cocoons are fabricated as late as April; the female commences this work by spinning a short strong horizontal line, to which

she suspends by a short pedicle,—and sometimes braces with a few fine lines,—a somewhat globular whitish cocoon of compact texture, 5 mm. in length, and 3 mm. in diameter; the base contracts into a narrow funnel-shaped outlet 2 mm. in length, through which the young escape. In this cocoon the female deposits about 36 unagglutinated spherical straw-coloured eggs.

Karaka, Auckland, *A.T.U.*

Fam. THOMISIDÆ.

Genus *Sparassus*, Walck.

Sparassus angulatus, sp. n.

Length of an adult female 7 mm.

The *cephalothorax* is a broad oval, constricted laterally forwards, and roundly truncated in front; the profile ascends abruptly from the hinder extremity, then slopes gradually, ascending slightly at the ocular area; the caput is depressed, and its converging grooves—in some examples forming a brown medial band—extend nearly to the base of the cephalothorax, which is of a yellow-ochreous hue, sparingly furnished with short papillæform hairs. Height of *clypeus* about half the depth of the facial space.

The *eyes* constitute a segment of a circle, with its convexity directed forwards; the lateral eyes of the anterior row are the largest, and the intermediate ones of the same row are the smallest of the eight.

Relative length of *legs* 1, 2, 4, 3, the first and second pairs (9–7 mm.) are much the stoutest and longest; they are a shade lighter than the cephalothorax, and furnished with papillæform hairs; the femoral joints of the first pair have an oblique row of three or four spines on the outer surface, the socket of the inner spine is remarkably developed; the femora of the second pair have only one spine; the tibiæ and metatarsi of the first and second pairs have each six spines on the inner, and four on the outer side of the inferior surface; the two hind-pairs are sparingly armed with spines; the tarsi are clothed with dark hairs, and terminate with two curved claws furnished with three coarse teeth, beneath them there is a small scopula.

The *palpi* resemble the legs in colour, and are armed with a minute claw.

The *falces* are vertical, tapering.

The *maxillæ* are straight, rounded at the extremity, inclined towards the lip which is oval.

The *sternum* is a broad oval, and has the uniform yellow-ochreous tint.

The fore-part of the *abdomen* rises abruptly from the pedicle, is truncate, with a slight cleft in the centre; the posterior extremity is the widest and somewhat square; at each angle there is a conical prominence directed backwards; the impressed spots form a square; it is of a dull ochreous

colour, and clothed with papillæform hairs; the ventral surface has the same hue. The *vulva* is formed by a nearly circular narrow wrinkled membraneous hood, in the centre there are two crimson-brown fovea.

Tairua, Whangarei Harbour, *T. Brown*; Karaka, Auckland, *A.T.U.*

Sparassus angularis, sp. n. Pl. x., fig. 7.

Length of an adult female 10 mm.

The *cephalothorax* of this species is comparatively longer than that of *S. angulatus*, being nearly as long as the abdomen, and the anterior constrictions are rather sharper; it is margined by a raised band; the caput bifurcates into two parallel medial ridges, ending at the thoracic slope (viewed laterally) in two conical prominences; it is of a reddish-amber colour, sparingly furnished with hair-like papillæ.

Relative length of *legs* 1, 2, 4, 3, the first and second (16–13 mm.) are much the strongest and longest; the armature differs from the former species in there being six spines irregularly seated along the outer surface of the femoral joint of the first pair.

The *maxilla*, *labium*, and *falces* have a dark hue.

The *sternum* is a broad oval, with slight prominences opposite the *coxæ*.

The *abdomen* has an earthy-brown colour, clothed with fine light hairs; the under surface has two pits below the *vulva*, not well marked in the former species. The genital organ differs slightly from that of *S. angulatus*.

There was only one example of this species in *Captain Brown's* Tairua collection.

Genus *Philodromus*, Walck.

Philodromus ambarus, sp. n. Pl. x., fig. 8.

Length of an adult female 6 mm.

The *cephalothorax* is of a reddish-amber colour, glossy, furnished with a few black bristle-like hairs; about as broad as long, rounded on the sides; anterior extremity broad and truncated, lateral marginal constrictions at the caput very slight, slopes abruptly posteriorly; height of *clypeus* about the depth of the ocular area.

The *eyes* describe a crescent on the anterior part of the caput, those of each lateral pair are larger than the intermediate ones, and are seated on yellowish cup-shaped tubercles; the four central eyes nearly form a square, and are placed on small yellowish tubercular prominences.

Relative length of *legs* 1, 2, 4, 3, the first and second are much the longest ($6\frac{1}{2}$ mm.) and strongest; they have a yellow-ochreous hue, and furnished, especially the femoral joints, with spine-like bristles; the *tibiæ* and *metatarsi* are armed with strong spines; the *tarsi* terminate with two curved pectinated claws, beneath which there is a small *scopula*.

The *palpi* have the same tint as the legs, armed with a few bristles, and small curved claw.

The *falces* are strong, convex, somewhat cuneiform, slightly inclined outwards.

The *maxillæ* are rather pointed, inclined towards the *lip*, which is oval, and obtuse at the apex; these parts are a yellow-ochreous, provided with a few strong black hairs.

Sternum heart-shaped.

The *abdomen* is oval, broadest towards the posterior end, somewhat globose, rises rather abruptly from the thoracic junction; it has a pale brown hue, two dark lake-coloured lines converge towards the hind extremity, forming a semi-oval and square space, in the centre of each space are four dark impressed spots; between the base of each of these lines and the spinners are a series of four oblique marks; the lateral margins have a band of creamy-white embossed small leaf-like marks. *Vulva* simple.

Tairua, Whangarei Harbour, *T. Broun*.

Philodromus sphaeroides, sp. n.

Length of an adult female 6 mm.

The colour of the *cephalothorax* is a pale amber, faintly tinged with pea-green; almost glabrous; it is oval, almost as broad as long; the *caput* is large, roundly truncated, anterior constrictions slight; the profile line rises abruptly, then runs in a straight line to the ocular area, forming an obtuse angle; the height of the *clypeus* equals the depth of the facial space.

The *eyes* are disposed on the anterior part of the *cephalothorax* in two transverse curved rows, in the form of a crescent whose convexity is before; they are seated on prominent orange-coloured tubercles, the lateral eyes are the largest of the eight, and their tubercular prominences conjoin.

The first and second pairs of *legs* are moderately robust, and of about equal length, the fourth and third are much the slightest and shortest; palish-amber, suffused, especially the first pair, with brownish-purple; the armature consists of about the normal number of spines and a few fine hairs and bristles; the *tarsi* terminate with the usual pair of claws and a *scopula*.

The *palpi* are furnished with hairs and bristles, and are like the legs in colour.

The *falces* are conical, short, broad at the base.

The *maxillæ* are straight, rounded at the extremities.

The *labium* is oval, slightly pointed.

Sternum heart-shaped; these parts have the amber hue of the legs.

The *abdomen* is a broad oval, the diameter equalling the length, convex; nearly glabrous, and of a pale yellowish pea-green, five distinct impressed spots form an acute triangle, which has its vertex directed forwards. The

ventral surface has an amber colour, sparingly clothed with a few fine hairs. The *vulva* is formed by a semicircular narrow wrinkled hood, of a pale amber hue, between it and the spinners there is a double row of six shallow foveæ.

Lake Tekapo, Canterbury, A.T.U.

Fam. SALTICIDÆ.

Genus *Salticus*, Latr.

Salticus zanthofrontalis, sp. n. Pl. xi., fig. 12.

Length of an adult male 5 mm.

The *cephalothorax* is somewhat quadrilateral, of a dull black hue, finely rugulose; irregularly clothed with yellowish hairs, lateral margins convex, edged with fine hairs; the profile line ascends abruptly from the thoracic junction, then runs with a slight slope to the occiput which projects a little over the falces. The height of the *clypeus* equals the diameter of a fore-lateral eye.

The ocular area is large, the hind-lateral *eyes*, which are the furthest apart, are placed near the verge of the posterior slope, and form with the faint fovea a transverse line; the small intermediate laterals are nearest to the anterior laterals; a rim of yellow lanceolate hairs curves over each of the fore-central eyes, and under the fore-laterals; the lower margins of the fore-centrals have white hairs of a similar form, and a few are scattered over the *clypeus*.

Relative length of legs, 1, 4, 2, 3, the first pair is longest and most robust; the femoral joints have a dark mahogany hue, the genual and tibial joints, especially of the first pair, have a crimson tinge; the metatarsi and tarsi are brownish; black and white hairs; armature normal, spines strong; the tarsi terminate with a pair of weak claws and scopula.

The *palpi* are furnished with hairs only, and are similar in colour to the legs; the humeral joint is rather long, the cubital and radial joints short, the latter is black, somewhat globose, and projects an apophysis near its articulation with the digital joint, which is long and narrow, convex, hairy and black above; beneath it is moderately convex, reddish-brown, with a large pad-like protuberance.

The *falces* are vertical, broad, flat, finely rugulose, black; furnished with long white hairs, and strong teeth.

The *maxillæ* are strong, broad, somewhat obliquely truncated, inclined towards the lip, which is nearly triangular; these parts are dark brown with light apices.

Sternum oval, black, few white hairs.

The *abdomen* is oviform, and resembles the cephalothorax in colour and clothing; ventral surface black, yellowish hairs.

Karaka, Auckland, A.T.U.

Salticus tabinus, sp. nov. Pl. xi., fig. 13.

Length of a mature female 5 mm.

The *cephalothorax* is somewhat quadrilateral, rounded posteriorly; it is thickly clothed with short fulvous and brown hair, forming a tabby pattern; the profile line rises rather abruptly from the base of the cephalothorax, then runs with a very slight curve to the ocular area, which projects over the falces; the *clypeus* in height equals the diameter of a fore-lateral eye, and is thickly furnished with light hairs.

Eyes normal.

Legs moderate, 4, 1, 2, 3, they do not differ much in length; pale stone-colour, hyaline, with dark grey and brown annulations; the armature consists of strong spines, hairs, and a few bristles; the tarsi are provided with the normal claws and scopula.

The *palpi* resemble the legs in colour, but are devoid of annuli.

The *falces* are short, broad at the base, vertical, divergent, black.

Maxillæ broad, and rounded at the extremity, divergent.

Labium oval, these parts are brownish yellow.

Sternum oval, convex, glossy, brownish yellow, few light hairs.

Abdomen oval, slightly pointed posteriorly, resembles the cephalothorax in colour and clothing; the ventral surface has a yellowish-brown hue. The *vulva* is formed by a narrow, somewhat angular membraneous hood; the central parts are somewhat convex, with two dark foveæ.

Scoria walls, North Shore, Auckland, A.T.U.

Salticus curvus, sp. n. Pl. xi., fig. 14.

Length of an adult male 5 mm.

The *cephalothorax* is nearly quadrilateral, rounded posteriorly; it is of a glossy brown black, finely rugulose, with a few light hairs about the margins, which are abrupt, medial indentation T-shaped; the profile line ascends with moderate curve from the thoracic junction, is horizontal as far as the hind-lateral eyes, then slopes off to the anterior extremity of the caput, which projects over the falces; the *clypeus* is sparingly furnished with long light hairs, and in height nearly equals the diameter of one of the fore-lateral eyes.

The fore- and hind-lateral *eyes* form a square, the intermediate laterals are equidistant between them; the anterior row are prominent.

The *legs* are moderate, and do not vary much in strength or length, 4, 3, 2, 1, the two hind and two fore pairs are about equal; in colour they are a dark brownish black, lightest at the extremities; the armature consists of a few brownish hairs and long strong spines; each tarsus terminates with two strongly-toothed claws, beneath which there is the usual scopula.

The *palpi* resemble the legs in colour, the humeral joint is moderately long, the cubital and radial short, the digital joint is oval, light brown, convex and hairy externally, reddish chocolate beneath; the palpal organs are prominent, projecting at the base in a convexity directed backwards; at the anterior extremity there are two small horn-like processes directed forwards and upwards.

The *falces* have a reddish-chocolate hue, shading off to an orange-red tint at their rounded extremities, strongly rugulose, moderately convex, and inclined towards the lip, curving outwardly (bandy) in the centre, armed with strong teeth.

The *maxilla* are nearly as broad as long, somewhat rounded, brown in colour, with a brassy appearance about the margins.

The *labium* is semicircular, dark brown.

Sternum oval, glossy brownish-black, clothed with a few hairs.

The *abdomen* is oval, moderately convex, glossy brown-black, thinly clothed with short dark hairs.

Whangarei Harbour, *T. Broun*.

Salticus furvus, sp. n. Pl. xi., fig. 15.

Length of a mature female 5 mm.

The *cephalothorax* is somewhat quadrilateral, rounded and sloping rather abruptly posteriorly, prominent in front, fovea moderately deep, placed on verge of slope; it is a dark brown-black, finely rugulose, sparingly furnished with bright fulvous hair; two faint lines converge from the lateral eyes to the thoracic junction, and the lateral margins are fringed with hairs of a similar hue. The *clypeus* is about equal to the diameter of a fore-lateral eye. The hind-lateral *eyes* are nearer to the anterior laterals than they are to each other.

Relative length of *legs*, 1, 4, 2, 3; in the first pair, which are the stoutest, the femoral joints have a reddish-brown tint, the four last joints have a crimson-brown tinge, the latter joints in the second pair have a similar hue, and the femoral joints have the brownish-yellow colour of the third and fourth pair, these have brown annulations. The armature consists of strong spines, a few bristles and fine hairs; the tarsi terminate with the usual claws and scopula.

The *palpi* have a light brownish hue.

The *falces* are vertical, somewhat flat, divergent, rugulose, reddish, armed with sharp teeth.

The *maxilla* are broad, and rounded at their extremity, moderately inclined towards the lip, bright brownish-amber colour.

The *labium* is somewhat oval, darker than the *maxilla*, with a light recurved apex.

The *sternum* is oval, nearly black.

The *abdomen* is oval, finely rugulose, transversely marked with indistinct brown and black streaks, thinly clothed with hairs of a similar shade to those of the cephalothorax; the sides and ventral surface are darker; two broad yellowish bands converge from above the branchial opercular round to the spinners, which are pale brown. The *vulva* consists of a prominent, short, broadly-tapering, wrinkled, reddish process, with a large orifice at the extremity.

Karaka, Auckland, A.T.U.

Salticus alpinus, sp. n. Pl. xi., fig. 16.

Length of an adult female 6 mm., and of an adult male 7 mm.

The *cephalothorax* is somewhat quadrilateral, rounded posteriorly; moderately depressed above; it is a dull black; sparingly clothed with pale yellow, coppery-yellow, and black hairs, forming a tabby-like pattern; the profile line ascends with a moderate curve from the thoracic junction, sloping off anteriorly at the caput; medial fovea shallow. The *clypeus* is furnished with long white hairs, and its height is about half the diameter of the fore-lateral eyes.

The ocular area is nearly as long as broad; fore- and hind-lateral *eyes* equal; small intermediate eyes equidistant between them.

The *legs* are moderately robust, relative length, 4, 1, 2, 3, fourth and first nearly equal; they are tinted with light brown and black annuli, clothed with black and white hairs; the armature of the first and second pairs consists of the usual double row of six spines on the inferior surface of the tibiæ, and of four on the metatarsi; the femoral joints of the third and fourth pair have two long bristle-like spines on the superior surface; one spine on the tibiæ, six at the end of the metatarsi; claws strong, curved, pectinated.

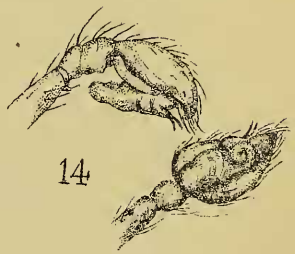
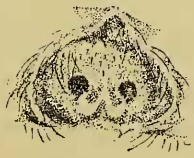
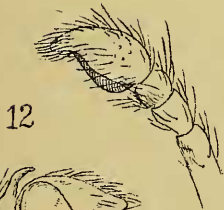
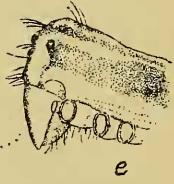
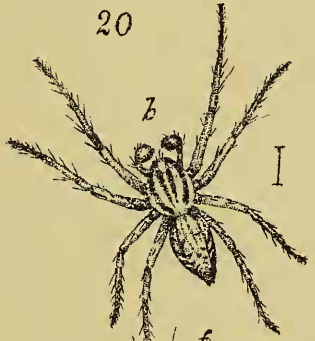
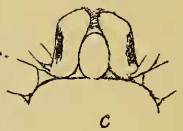
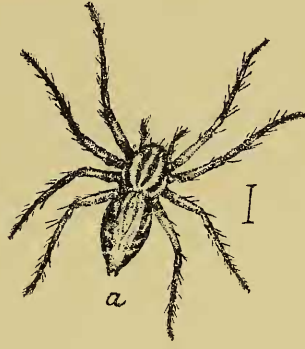
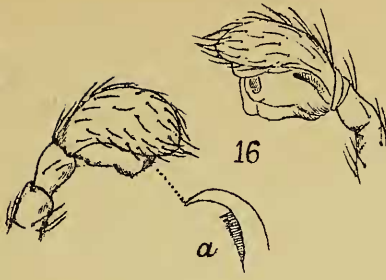
The *palpi* have a fulvous tinge, and are clothed with white hairs.

The *falces* are vertical, convex, moderately broad, pale brown.

The *maxillæ* are broad, obliquely truncated, inclined towards the *lip*, which is semicircular, pointed; these parts have a light brown colour.

The *sternum* is oval, black.

The *abdomen* is oval, rises with an inward curve from the pedicle, is pointed posteriorly; in colour and markings it resembles the cephalothorax, but it is more thickly clothed with hair; the under side is light brown, sparingly furnished with short light hairs; a prominent medial ridge extends from the genital organ to the spinnerets, which are moderately long. The *vulva* is a simple hood-like, greenish-brown prominence, concave within.



A.T. U. del.

NEW ZEALAND SPIDERS.